

Errors in Irrigation versus IV Infusion in the Operating Room

Irrigation solutions are not typically available in ready-to-use labeled packaging. In the operating room (OR), a sterile IV solution may be mixed with an additive such as heparin or Dakin's solution and used to irrigate wounds. Using IV bags and tubing to mix and administer these solutions may result in errors and cause patient harm. There have been numerous reports in ORs where a solution was erroneously administered intravenous (IV) when it was intended for bladder or wound irrigation. One issue is that the packaging of IV and irrigation solutions, both with and without additives, look the same. In addition, access ports of IV tubing are often compatible with access ports used for irrigation and other routes of administration, which may result in misconnections and infusion by the wrong route. Additional factors that can result in error include: unlabeled or poorly labeled solutions; staff reliance on the expected location of solutions (i.e., designated IV poles or sterile field); failure to read labels; repetitive tasks that result in automatic behavior without conscious thought; chaotic workspace; and problems with workflow.

The following strategies may prevent errors in IV administration of irrigation solutions:

- Have the pharmacy prepare, label, and supply irrigation solutions for the OR.
- Use the lowest effective concentration of heparin in irrigation solutions and standardize the strength for pharmacy preparation.
- Utilize different irrigation solution containers. For example, purchase or prepare sterile solutions for irrigation in pour bottles or use fluid bags of a different size for solutions intended for irrigation (i.e., 2 Liter or 3 Liter bags).
- Use sodium chloride 0.9% for heparinized irrigations. Sodium Chloride 0.9% is available in pour bottles which helps differentiate it from other IV solutions in bags.
- Separate IV solutions from irrigation fluids; store them in different areas of the OR, and clearly label these areas "IV Use Only" or "Irrigation Use Only".
- Label all irrigation solutions immediately after preparation, including name and amount of any drug added to the solution, expiration date and time. Ensure all supplies, including labels, are available in the medication preparation areas.
- Utilize unique, brightly colored auxiliary labels, stating "For Irrigation ONLY" on any irrigation solution.
- Use irrigation tubing and irrigation-specific connections, if available, and label the tubing "for irrigation only".
- Use designated "irrigation" poles if irrigation fluids need to be hung to fill a sterile basin on the sterile field; label the solution, poles and basin on the sterile field.
- Communicate utilizing a transition of care report when a patient is transferred from the OR to the post-anesthesia care unit (PACU) and for staff relief during a case. Reconcile and verify all medications and fluids.
- Establish standardized protocols to reverse adverse effects and drug overdoses.

Reference

Institute for Safe Medication Practices. (2017). *Nurse Advise-ERR*. Retrieved from Institute for Safe Medication Practices: <http://www.ismp.org/newsletters/nursing/issues/NurseAdviseERR201702.pdf>